

GENERAL NOTES

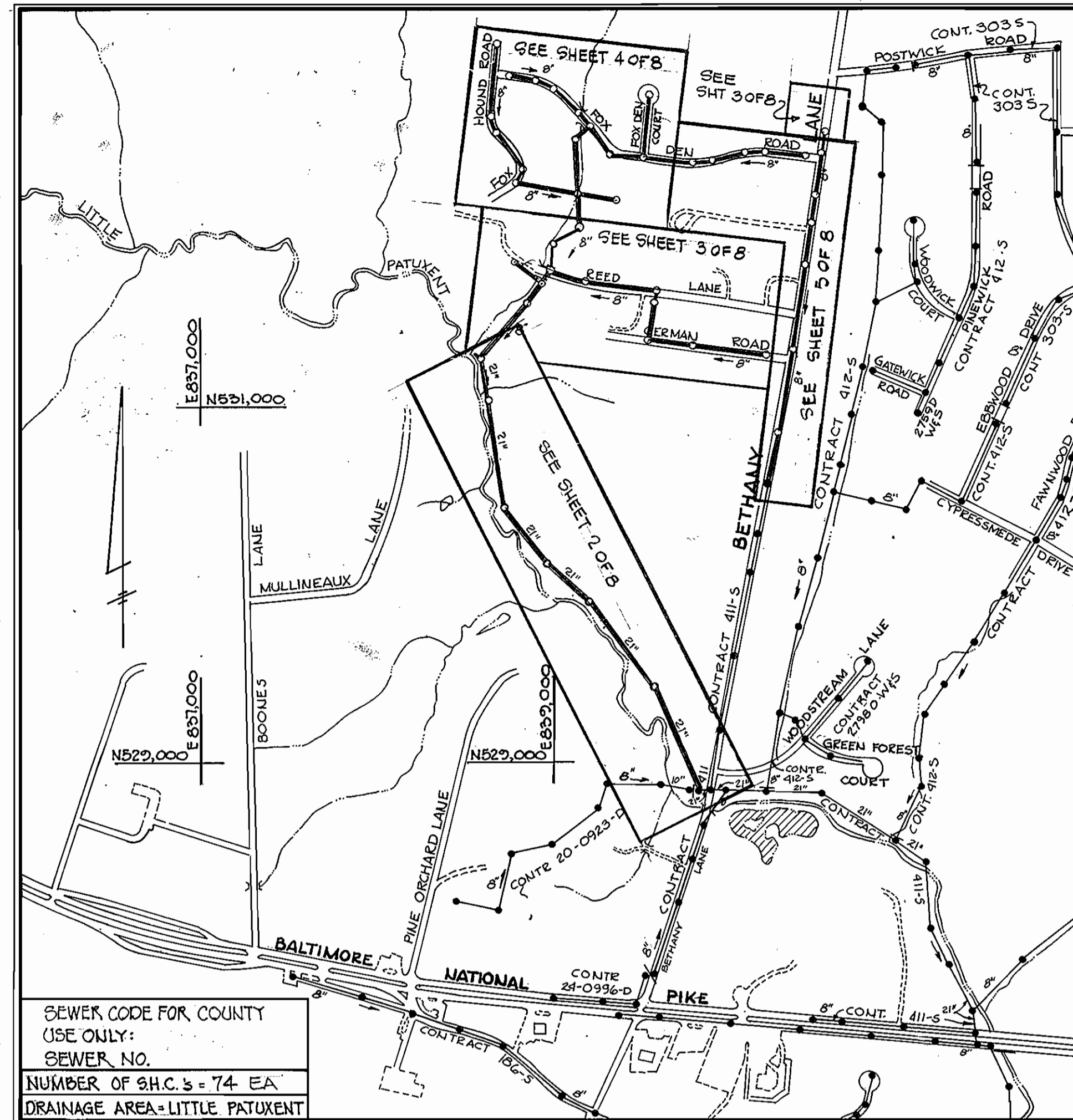
- APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT @ ELEVATIONS, UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN VICINITY OF PROPOSED UTILITIES AT HIS OWN EXPENSE. ANY CONFLICTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER.
- ALL MATERIALS AND CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6 INCHES. CLEAR ALL POLES BY 2'-0" MIN. OR TUNNEL, AS REQUIRED. ANY COSTS INCURRED TO THE CONTRACTOR FOR TUNNELING OR BRACING AT POLES SHALL BE INCLUDED IN THE UNIT PRICES BID FOR PIPE INSTALLATION, AS APPLICABLE.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALLS.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER, UNLESS OTHERWISE NOTED.
- TREES ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES LOCATED WITHIN THE CONSTRUCTION STRIPS ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS:
BALTIMORE GAS & ELECTRIC - UNDERGROUND ELECTRIC DIVISION CUSTOMER SERVICE - (285-0123)
BALTIMORE GAS & ELECTRIC - UNDERGROUND GAS DIVISION CUSTOMER SERVICE - (285-0123)
ENGINEERING - DAMAGE CONTROL - (284-5621)
"MISS UTILITY" - (1-557-0100)
CHESAPEAKE & POTOMAC (C&P) TELEPHONE - (125-9976)
BUREAU OF UTILITIES, HOWARD COUNTY - (292-2866)
- ALL SEWER MAINS SHALL BE C.S.P.C., V.C.P.C. CLASS 2400, D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE DATUM.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL AND DISPOSAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE INSTALLATION AS APPLICABLE.
- PLACE REGULATION "MEN WORKING" AND WARNING SIGNS AS WELL AS OTHER REQUIREMENTS NECESSARY TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION & MAINTENANCE OPERATIONS.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
COLONIAL PIPELINE COMPANY: 301-795-1390 OR 301-781-4641
DASTAN CABLE COMPANY INC.: 301-997-2700
- (A) - DENOTES ASSUMED ELEVATION.

CONSTRUCTION SCHEDULE SEQUENCE

- INSTALLATION AND STABILIZATION OF SEDIMENT AND EROSION CONTROL MEASURES.
- CLEARING AND GRUBBING CONSTRUCTION AREA.
- REMOVAL AND/OR DISPOSAL OF TREES, STUMPS, OR OTHER DEBRIS.
- CONSTRUCTION OF SANITARY SEWER AND APPURTENANCES.
- WHEN AUTHORIZED REMOVAL OF TEMPORARY SEDIMENT CONTROL DEVICES.
- RE-STABILIZE ALL DISTURBED AREAS.

SEDIMENT CONTROL NOTES

- ALL CONSTRUCTION PERTAINING TO SOIL EROSION AND SEDIMENT CONTROL SHALL BE CONSTRUCTED IN ACCORDANCE WITH ARTICLE 15 OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS, REVISED JANUARY, 1982 AND THE HOWARD SOIL CONSERVATION DISTRICT'S STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS, DATED JULY, 1975.
- STRAW BALE DIKES, STONE OUTLET STRUCTURES, TEMPORARY EARTH DIVERSION BERMS, TEMPORARY STREAM ACCESS CULVERTS, ETC. SHOWN ON THE PLANS MAY BE ADDED TO, DELETED, OR ADJUSTED AS FIELD CONDITIONS MAY REQUIRE.
- ALL SPOIL MATERIALS SHALL BE STOCKPILED ON THE HIGH SIDE OF THE CONSTRUCTION STRIP.
- STABILIZED CONSTRUCTION ENTRANCES, IF REQUIRED, TO BE LOCATED WHERE DIRECTED BY THE ENGINEER IN THE FIELD.



**CONTRACT NO. 20-1067
CAPITAL PROJECT S-6051
BETHANY MANOR**

ITEM	QUANTITIES			SUPPLIERS
	ESTIMATED	AS-BUILT	MATERIALS	
21" SEWER	2750 LF	2742.64 LF	R.C.P.	Gray Concrete
8" SEWER	8750 LF	8295.27 LF	P.V.C.	Lazzati Co.
6" SEWER	1920 LF	1388.78 LF	P.V.C.	Lazzati Co.
MHS	46 EA	45 EA	Pre-cast Concrete	Atlantic Concrete

**INTERCEPTOR AND COLLECTOR SEWERS
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS**

THIS PLAN IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: William I. Rowe 9-14-82
HOWARD SOIL CONSERVATION DISTRICT DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND SHEETS TECHNICAL REQUIREMENTS.

APPROVED: James M. DeLoe 9-14-82
U.S. SOIL CONSERVATION SERVICE DATE



David R. Hall 8-26-82
DAVID R. HALL #10517 DATE

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Arthur E. Leonard 9/10/82
DATE

"I CERTIFY THAT ALL CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

William E. Riley 9-13-82
DATE

CONTRACT No. 20-1067
CAPITAL PROJECT S-6051
BETHANY MANOR INTERCEPTOR AND COLLECTOR SEWERS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

William E. Riley 8-30-82
DIRECTOR OF PUBLIC WORKS DATE
Allen S. Brown 8/30/82
CHIEF, BUREAU OF UTILITIES DATE

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS ARCHITECTS SURVEYORS
5 SOUTH MAIN STREET BEL AIR, MARYLAND

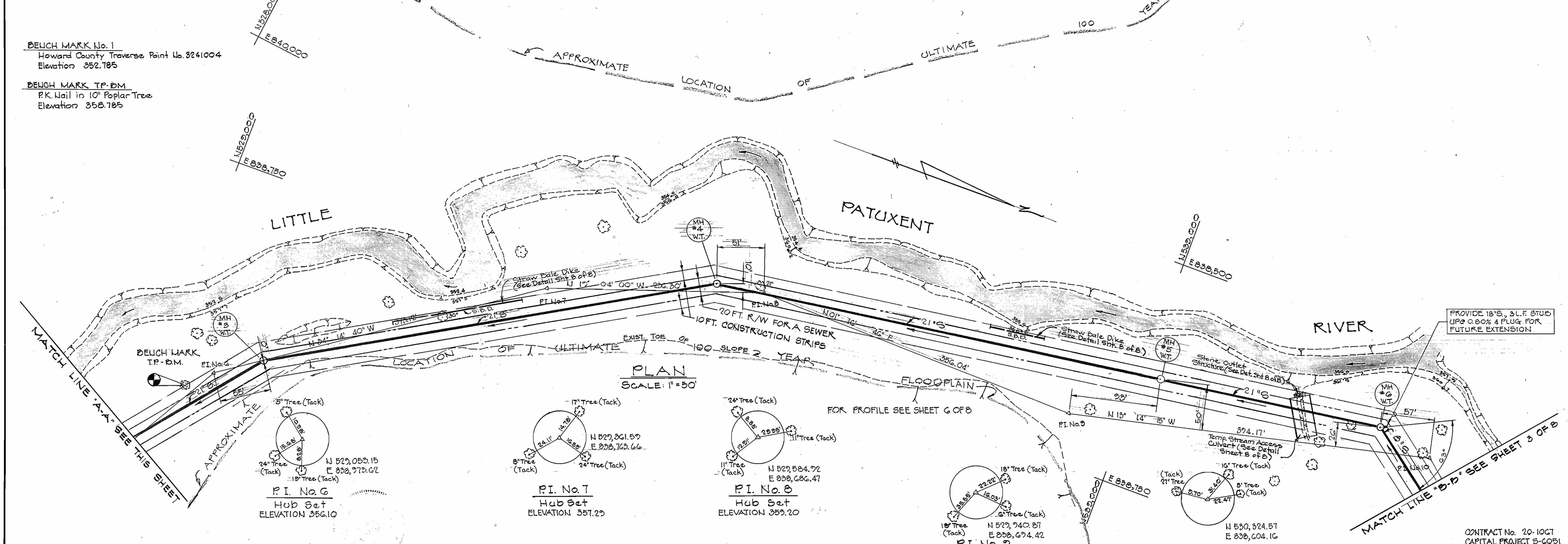
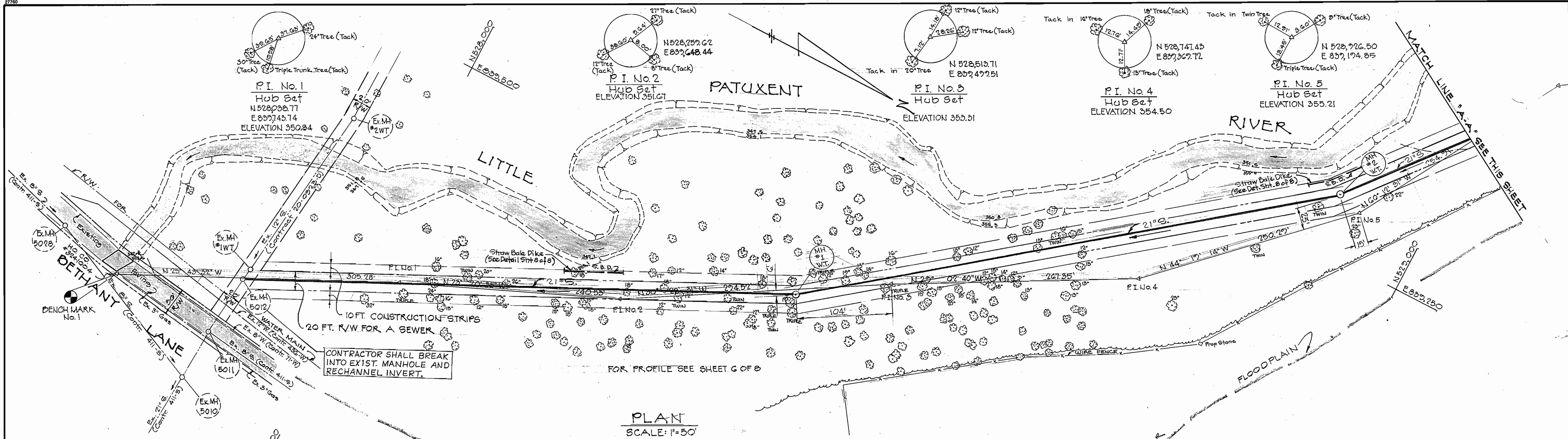
EPA PROJ. NO. C-240723-05
CONTRACT NO. 20-1067
CAPITAL PROJECT S-6051

LOCATION MAP

ELECTION DISTRICT
ELLCOTT CITY NO. 2

AS-BUILTS

DRAWING NO. 1 OF 8
SCALE 1" = 600'
DES: wdb
CHK: AEL



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *W. E. Norman* 8/30/82
 Chief, Bureau of Engineering: *W. E. Norman* 8/30/82
 Chief, Bureau of Utilities: *R. H. Brown* 8/30/82
 Chief, Utility Division: *Alta L. Brown* 8/30/82

8-20-82
 DAVID R. HALL #10817 DATE
FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS ARCHITECTS SURVEYORS
 5 SOUTH MAIN STREET BEL AIR, MARYLAND

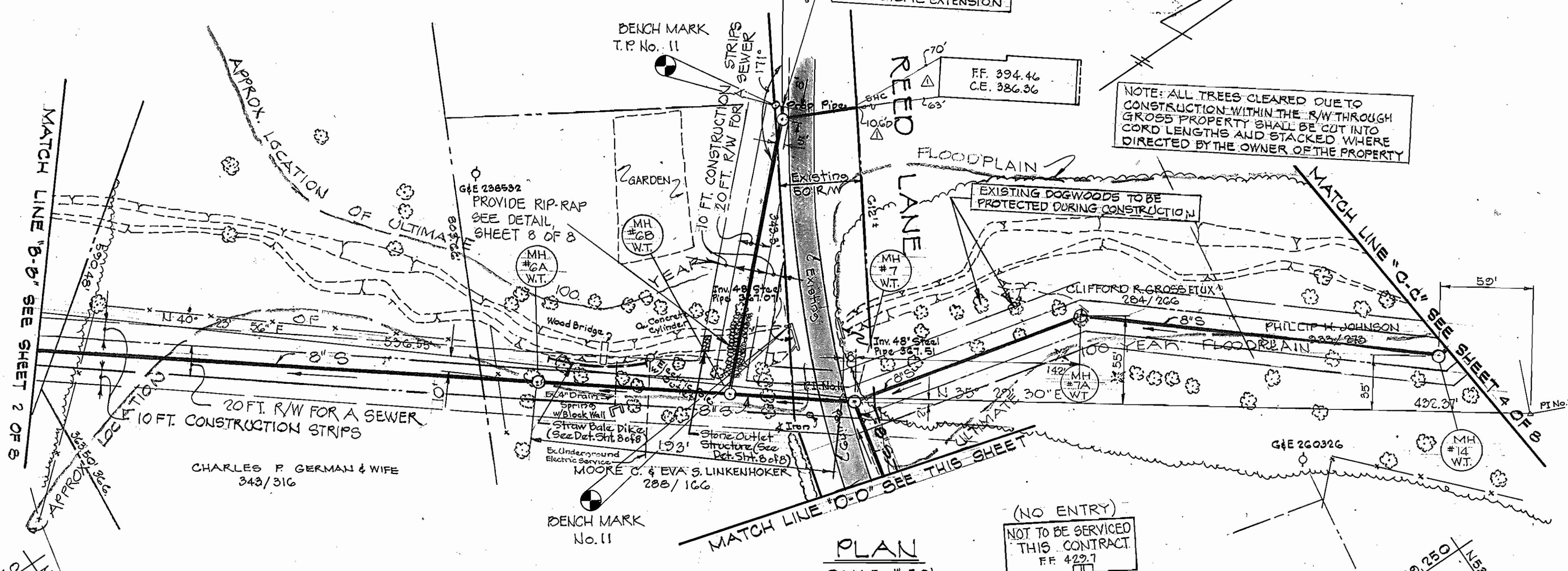
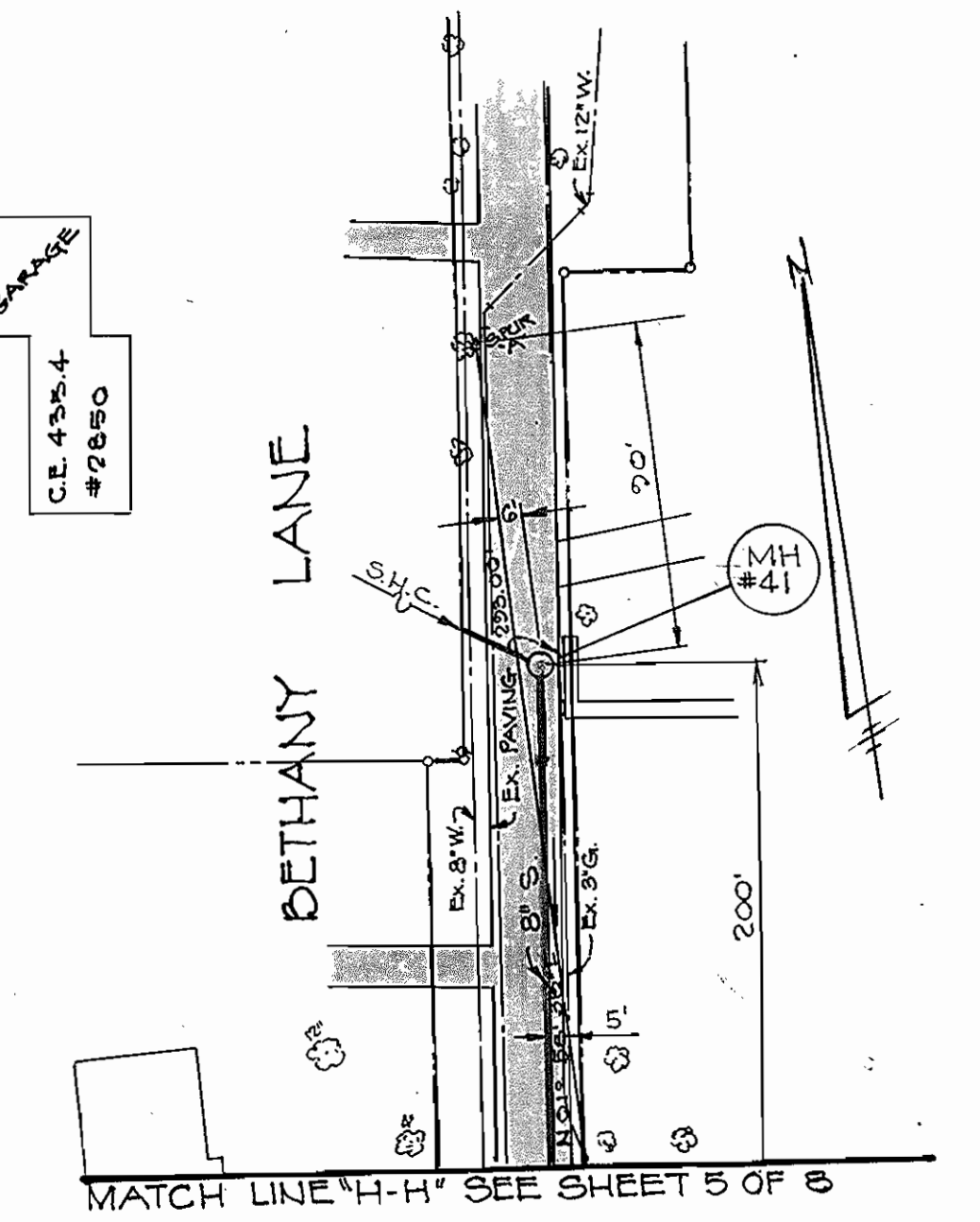
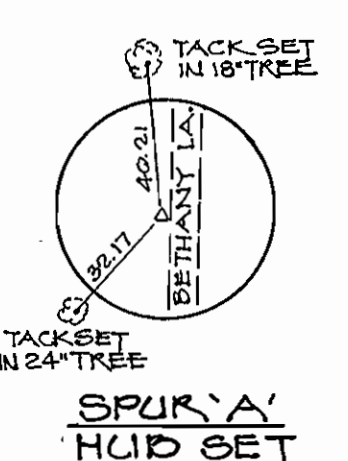
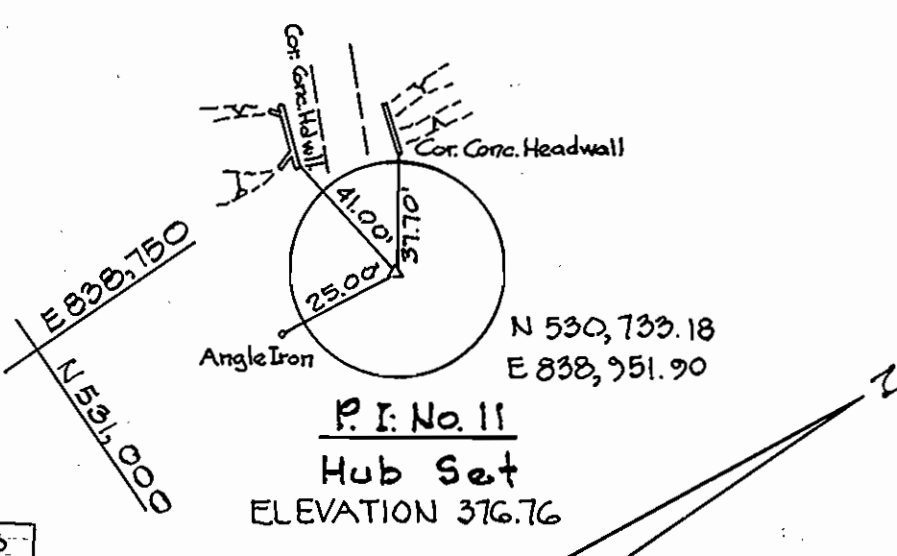
CONTRACT NO. 20-1067
 CAPITAL PROJECT S-6051
PLAN OF SEWER MAIN

ELECTION DISTRICT
 ELLICOTT CITY NO. 2
 DRAWING NO. 2 OF 8
 SCALE AS SHOWN
 DES: A.E.L.
 DRN: T.W.
 CHK: A.E.L.

CONTRACT No. 20-1067
 CAPITAL PROJECT S-6051
 BETHANY MANOR INTERCEPTOR AND COLLECTOR SEWERS
 HOWARD COUNTY

NOTE: MOORE C. & EVA S. LIUKENHOKER PROPERTY THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING THE EXISTING UNDERGROUND ELECTRIC SERVICE RUNNING FROM POWER POLE TO HOUSE, ALSO THE EXISTING 4" DRAIN FROM SPRINKLING TO STREAM.

CLIFFORD & PATRICIA GROSS PROPERTY THE CONTRACTOR SHALL RELOCATE THE FOLLOWING OUTSIDE THE BASEMENT AREA, IF STILL IN THE BASEMENT AREA AT TIME OF CONSTRUCTION
 (1) ONE WOOD PILE, APPROX. THREE (3) CONDS
 (2) ONE ROCK PILE, APPROX. 30 TONS
 (3) COMPOST PILES.



PLAN
SCALE: 1"=50'
FOR PROFILE SEE SHEET 6 OF 8

- BENCH MARK T.P. No. 11
TOP 1/2" PIPE IN 12" CONCRETE AT PROPOSED M.H. # G.C. REED LANE ELEVATION 382.109.
- BENCH MARK No. 11
SOUTHWEST CORNER SOUTH HEADWALL REED LANE AT M.H. 7. ELEVATION 374.799
- BENCH MARK No. 14
PROPERTY CORNER PIPE (1/2") IN 12" CONCRETE, S.E. CORNER, PROPERTY OF #10010 AT M.H. #9 REED LANE. ELEV. 402.409
- BENCH MARK No. 15
PROPERTY CORNER, CONCRETE MONUMENT, SOUTH SIDE REED LANE OPPOSITE BENCH MARK 5 AT M.H. 10 ELEVATION 401.659
- BENCH MARK T.P. No. 16
NORTHWEST FLANGE BOLT ON FIRE HYDRANT, BETWEEN HOUSES 10025 & 10021 SOUTH SIDE GERMAN ROAD ELEVATION 426.309

CONTRACTOR SHALL REMOVE AND REPLACE EXISTING HEADWALL WITH HOWARD COUNTY STANDARD TYPE "C" ENDWALL, 18" CIRCULAR PIPE. PAYMENT SHALL BE INCLUDED IN UNIT PRICE BID FOR SEWER PIPE INSTALLATION. (HO. CO. PLATE NO. 90-921)

Rev.	Date	Remarks
Δ	12-84	As-Builts

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *Robert M. Brown*
 Chief, Bureau of Engineering: *Allen J. Brown*
 Chief, Bureau of Utilities: *Robert M. Brown*

FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS ARCHITECTS SURVEYORS
 5 SOUTH MAIN STREET BEL AIR, MARYLAND
 DAVID R. HALL #10917 DATE 8-26-82

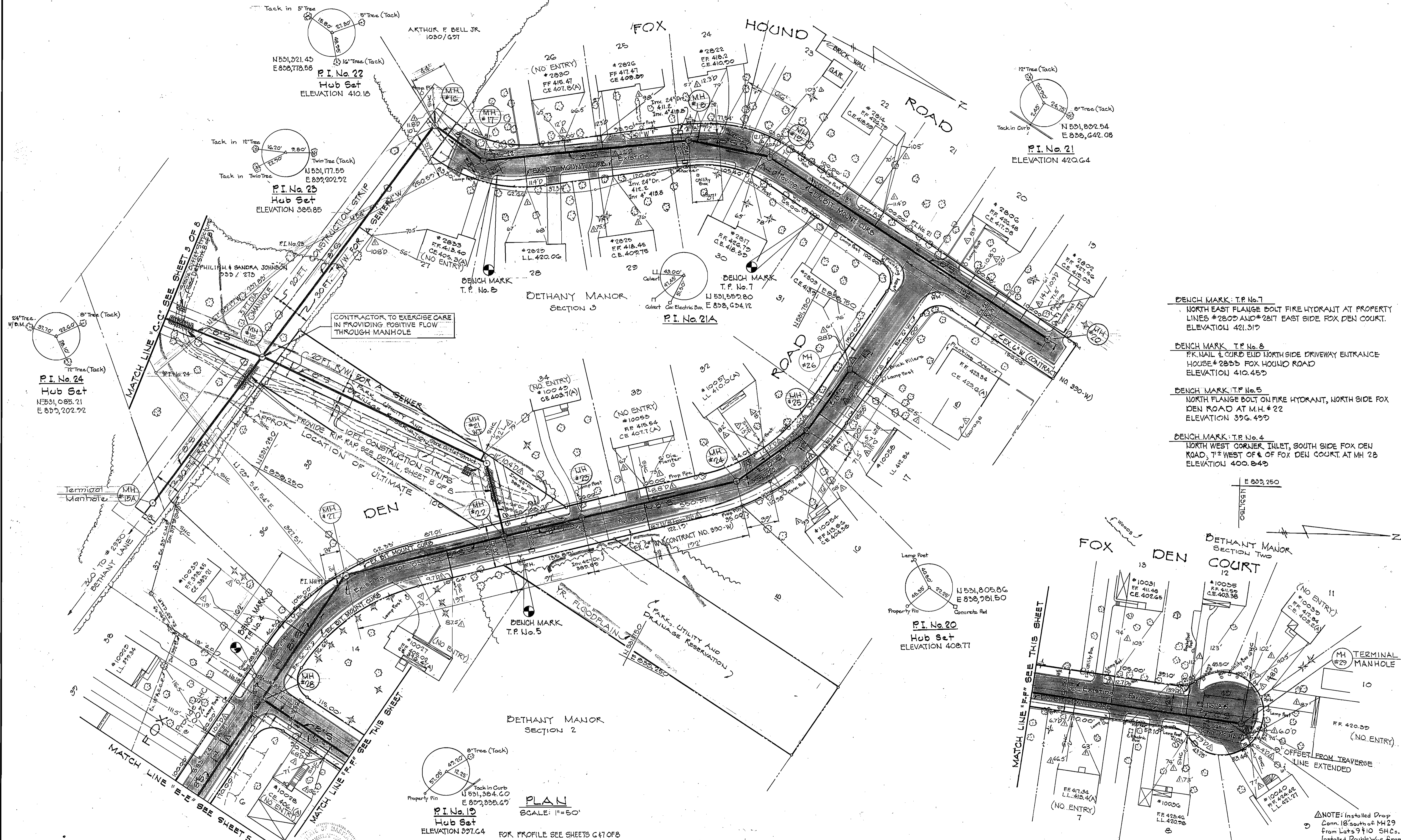
CONTRACT NO. 20-1067
 CAPITAL PROJECT S-6051

PLAN OF SEWER MAIN

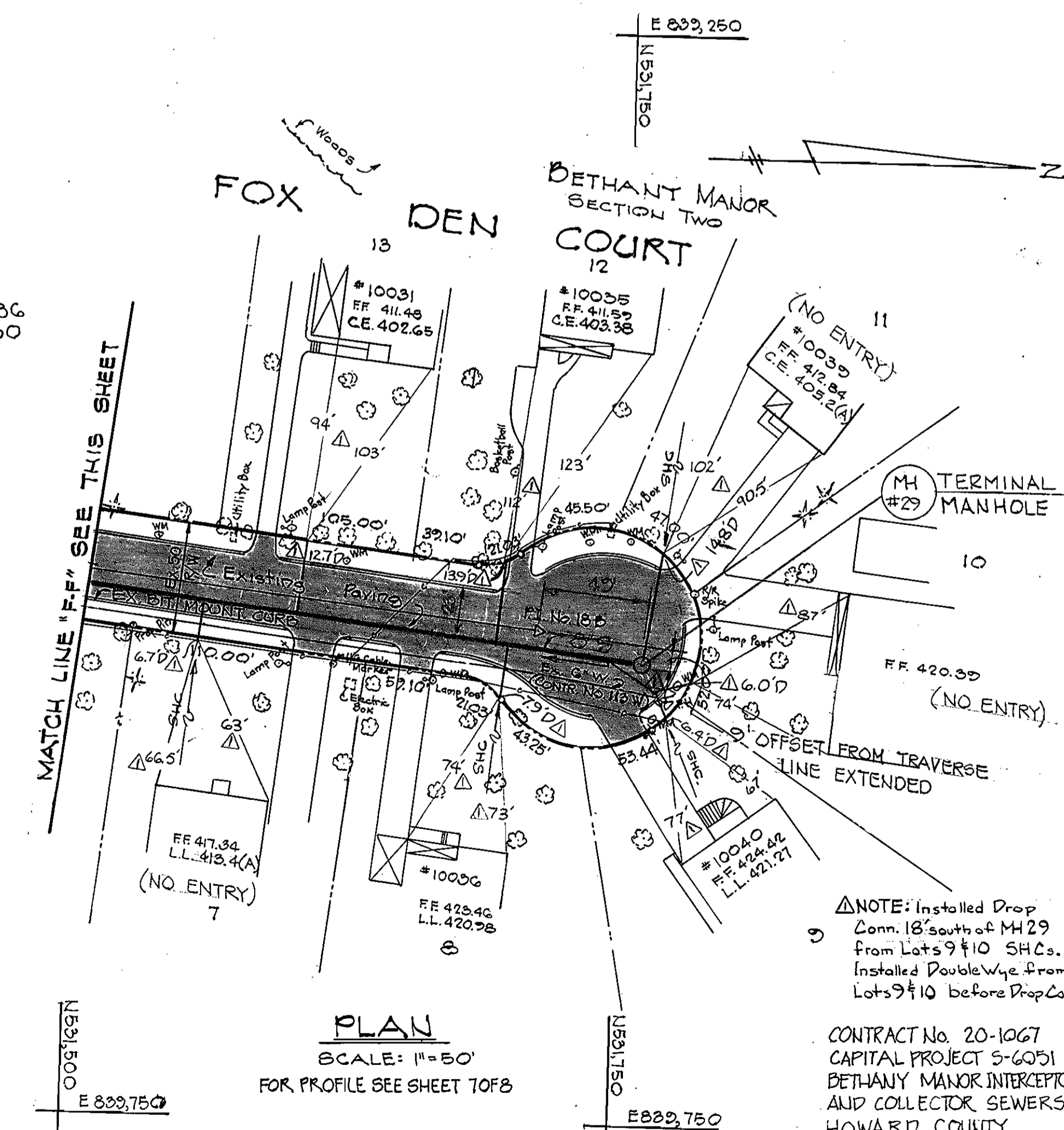
ELECTION DISTRICT ELLICOTT CITY NO. 2

DRAWING NO. 3 OF 8
 SCALE AS SHOWN
 DES: A.E.L.
 DRN: T.W.
 CHK: A.E.L.

CONTRACT No. 20-1067
 CAPITAL PROJECT S-6051
 BETHANY MANOR INTERCEPTOR AND COLLECTOR SEWERS
 HOWARD COUNTY



- BENCH MARK: T.P. No. 7
NORTH EAST FLANGE BOLT FIRE HYDRANT AT PROPERTY LINES #2809 AND #2817 EAST SIDE FOX DEN COURT. ELEVATION 421.319
- BENCH MARK: T.P. No. 8
PK. NAIL & CURB END NORTH SIDE DRIVEWAY ENTRANCE HOUSE #2853 FOX HOUND ROAD ELEVATION 410.459
- BENCH MARK: T.P. No. 5
NORTH FLANGE BOLT ON FIRE HYDRANT, NORTH SIDE FOX DEN ROAD AT M.H. #22 ELEVATION 396.499
- BENCH MARK: T.P. No. 4
NORTH WEST CORNER INLET, SOUTH SIDE FOX DEN ROAD, 7' WEST OF E. OF FOX DEN COURT. AT MH #28 ELEVATION 400.849



Rev.	Date	Remarks
1	12-84	A-Built

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *Robert M. Brown*
 Chief, Bureau of Engineering: *Allen S. Brown*
 Chief, Bureau of Utilities: *Allen S. Brown*

DAVID R. HALL #10517
 8-26-82
 FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS ARCHITECTS SURVEYORS
 5 SOUTH MAIN STREET BEL AIR, MARYLAND

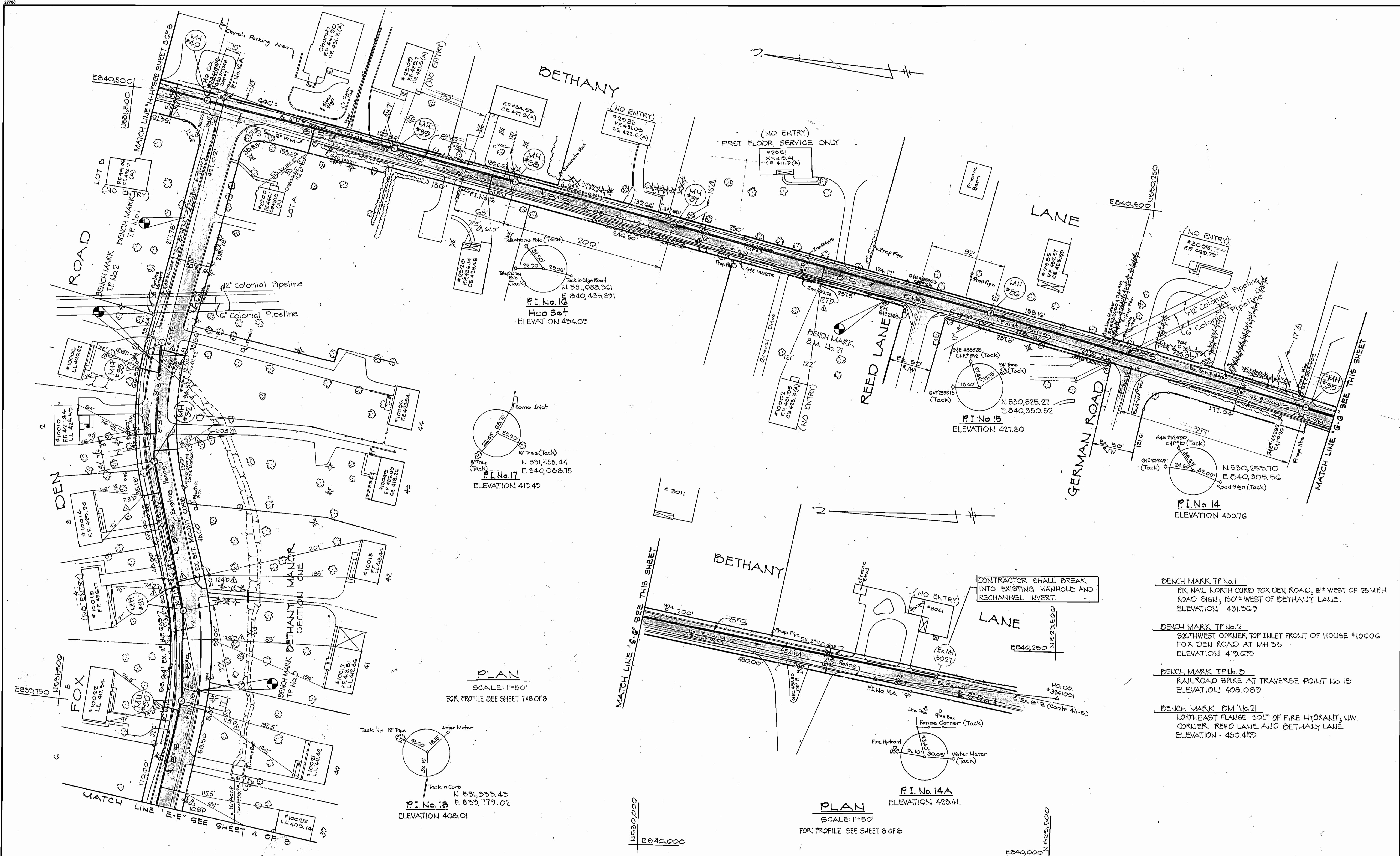
CONTRACT NO. 20-1067
 CAPITAL PROJECT S-6051

PLAN OF SEWER MAIN

AS-BUILTS

ELECTION DISTRICT ELLICOTT CITY NO. 2

DRAWING NO. 4 OF 8	SCALE AS SHOWN	DES: A.E.L. DRN: T.W. CHK: A.E.L.
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Rev.	Date	Remarks
Δ	12-84	As-Builts

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 DATE: 8/30/82
 ALLEN L. BRANN, CHIEF, UTILITY DIVISION

DAVID R. HALL #10517
 DATE: 8-26-82
FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS ARCHITECTS SURVEYORS
 5 SOUTH MAIN STREET BEL AIR, MARYLAND

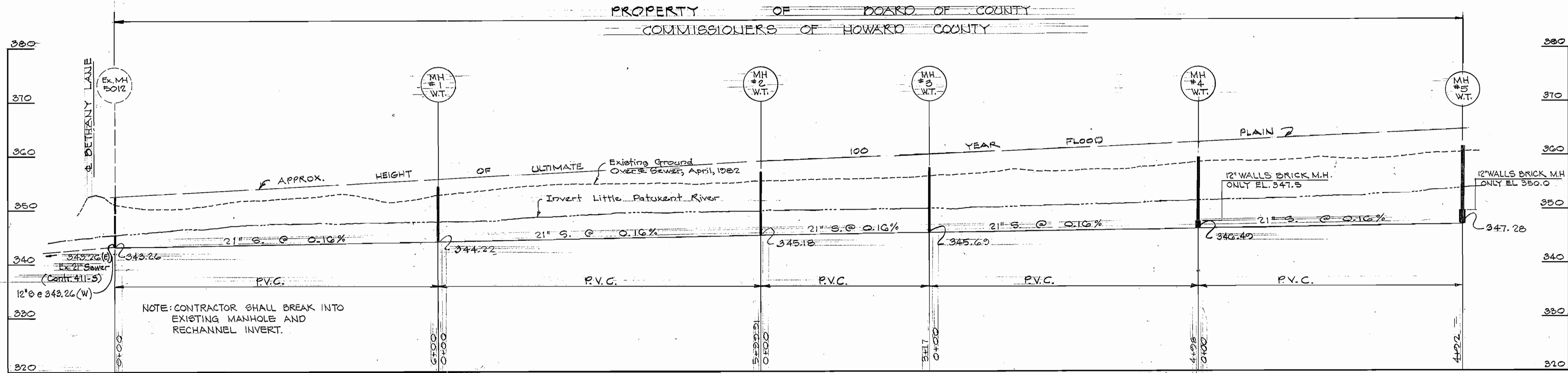
CONTRACT NO. 20-1067
 CAPITAL PROJECT S-6051

PLAN OF SEWER MAIN

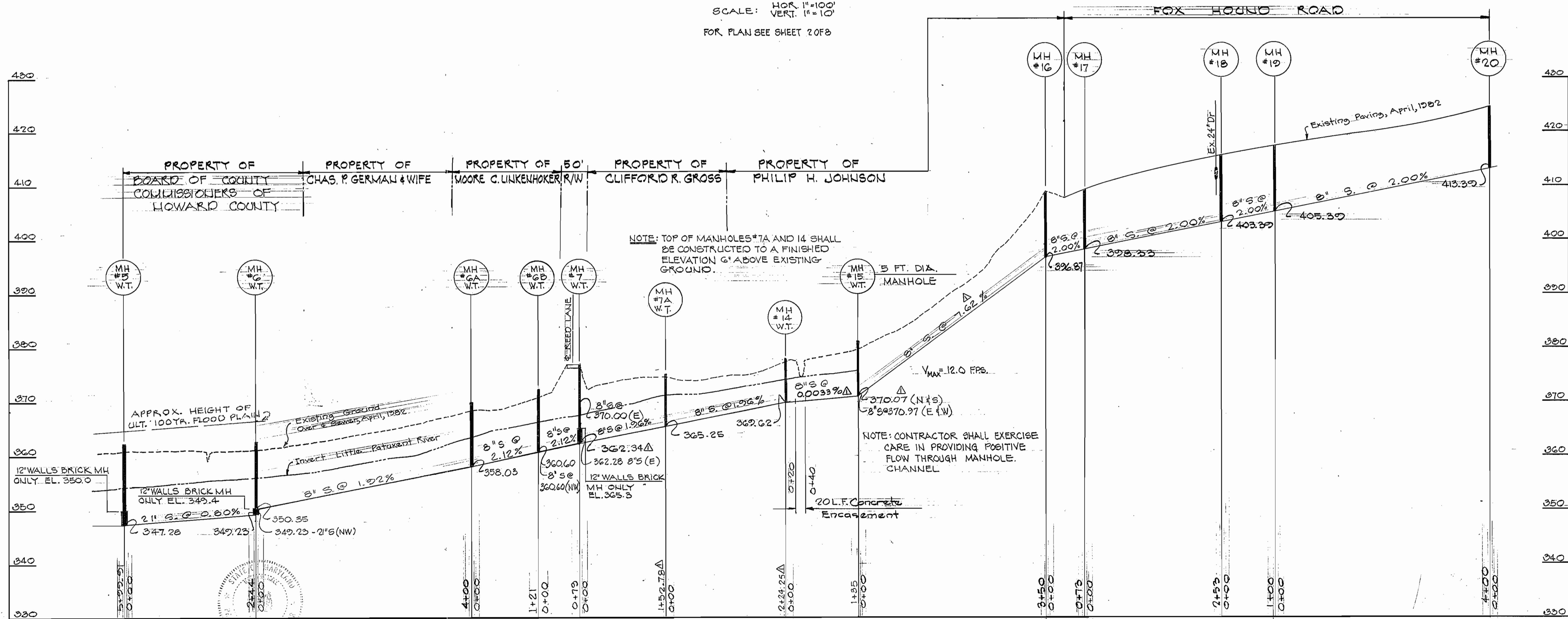
AS-BUILTS
 ELECTION DISTRICT
 ELLICOTT CITY NO. 2

DRAWING NO. 5 OF 8	SCALE AS SHOWN	DES: A.E.L. DRN: T.W. CHK: A.E.L.
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CONTRACT No. 20-1067
 CAPITAL PROJECT S-6051
 BETHANY MANOR INTERCEPTOR AND COLLECTOR SEWERS
 HOWARD COUNTY



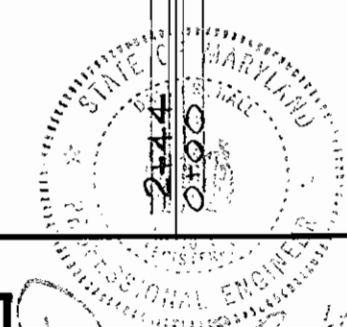
PROFILE
SCALE: HOR. 1"=100'
VERT. 1"=10'
FOR PLAN SEE SHEET 20F8



PROFILE
SCALE: HOR. 1"=100'
VERT. 1"=10'
FOR PLAN SEE SHEETS 23, 14 OF 8

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND
DAVID R. HALL #10517
DATE 8-26-82



DAVID R. HALL #10517
DATE 8-26-82

FREDERICK WARD ASSOCIATES, INC.
ENGINEERS ARCHITECTS SURVEYORS
5 SOUTH MAIN STREET BEL AIR, MARYLAND

CONTRACT NO. 20-1067
CAPITAL PROJECT S-6051

PROFILE OF
SEWER MAIN

Rev.	Date	Remarks
Δ	12-84	As-Built

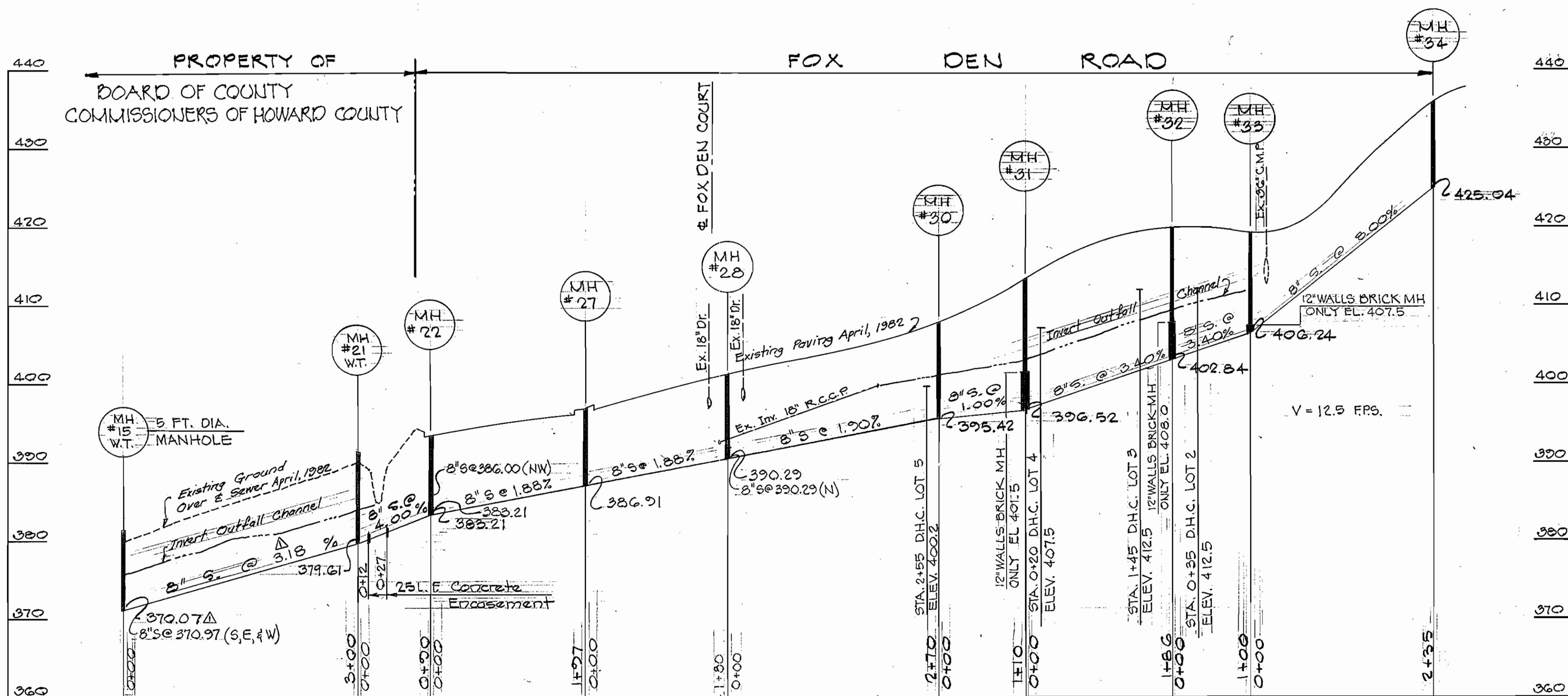
AS-BUILTS

ELECTION DISTRICT
ELLICOTT CITY NO. 2

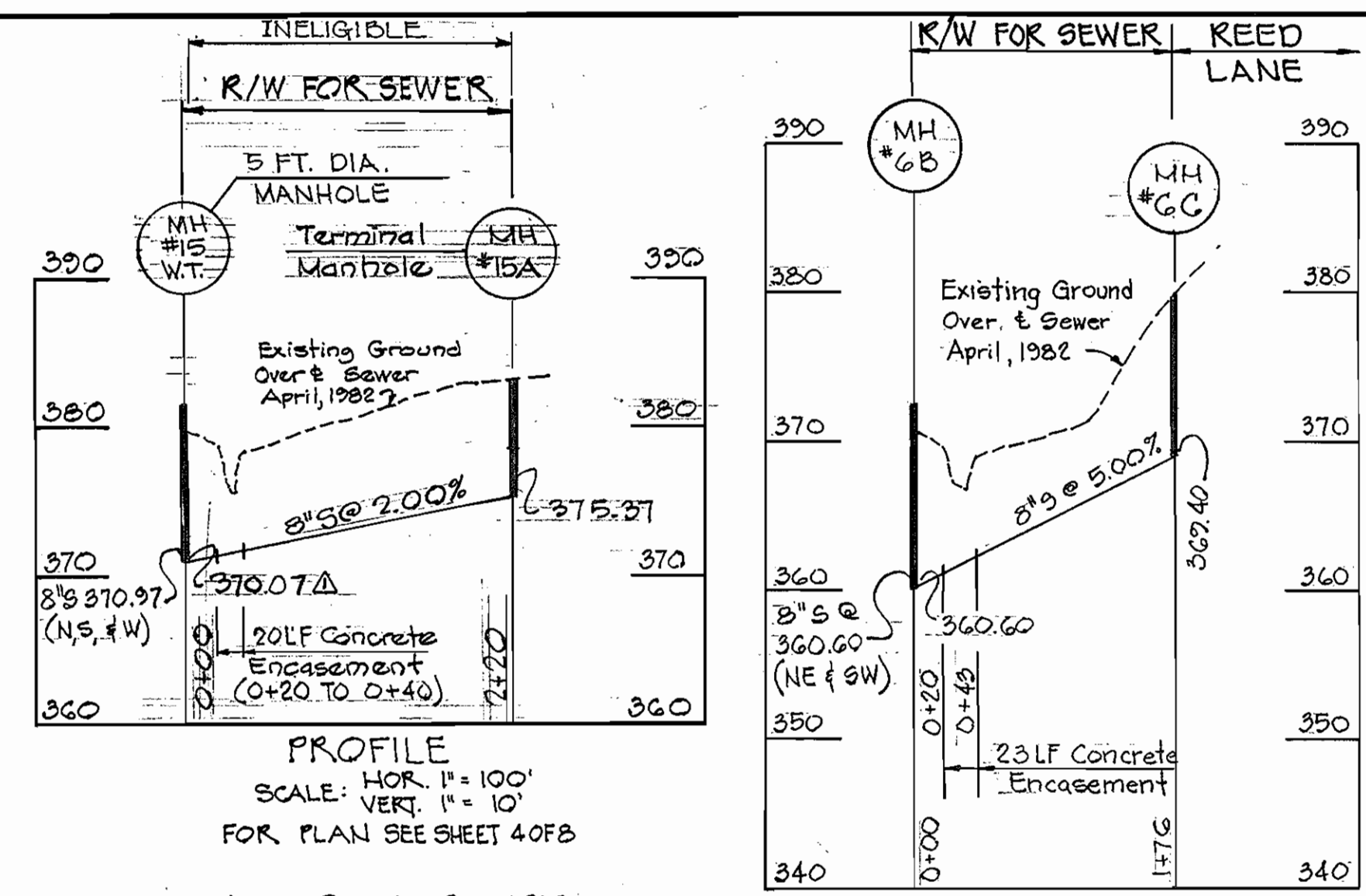
DRAWING
NO. 6
OF 8

SCALE
AS SHOWN
DES: A.E.L.
DRN: J.W.
CHK: A.E.L.

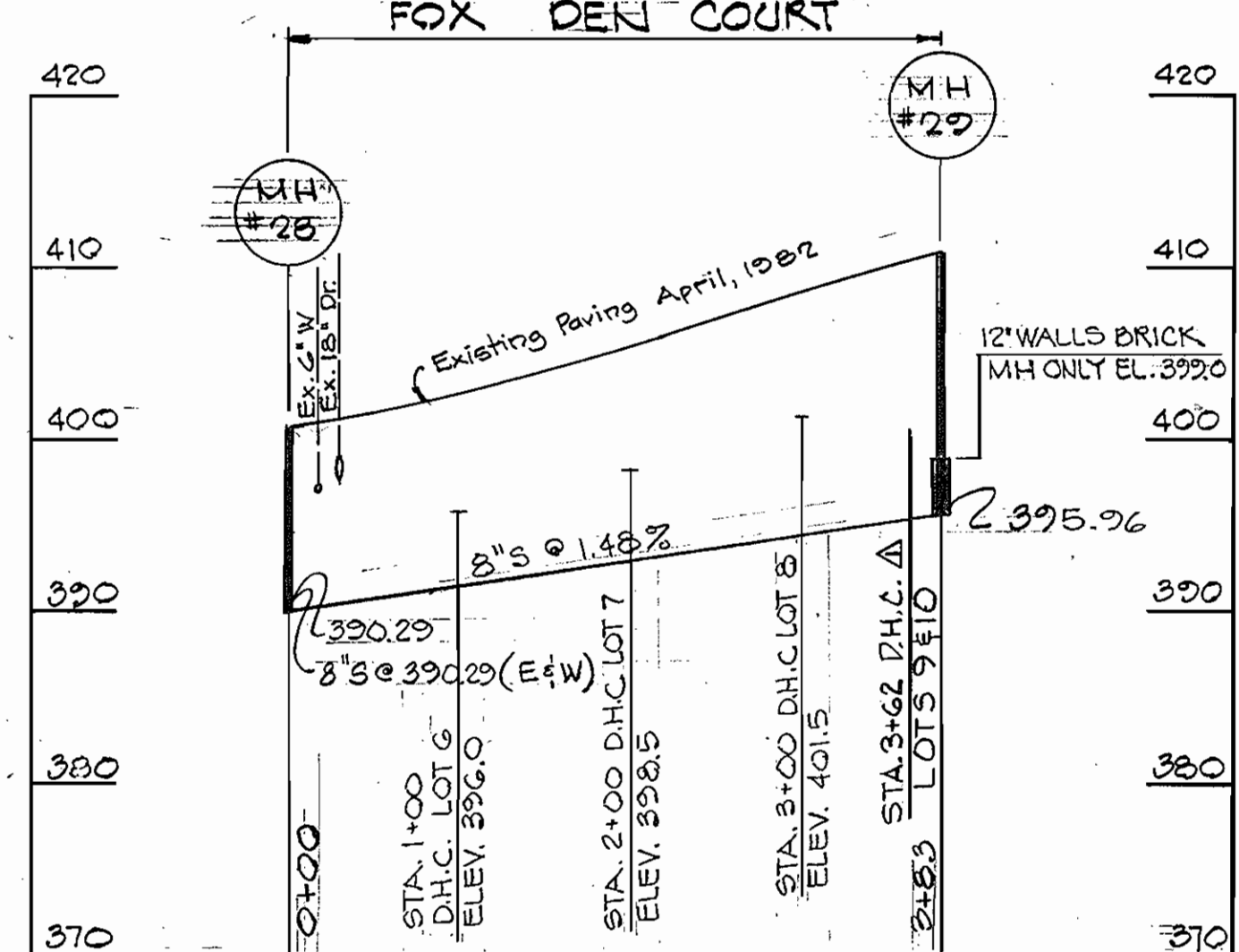
CONTRACT No. 20-1067
CAPITAL PROJECT S-6051
BETHANY MANOR INTERCEPTOR
AND COLLECTOR SEWERS
HOWARD COUNTY



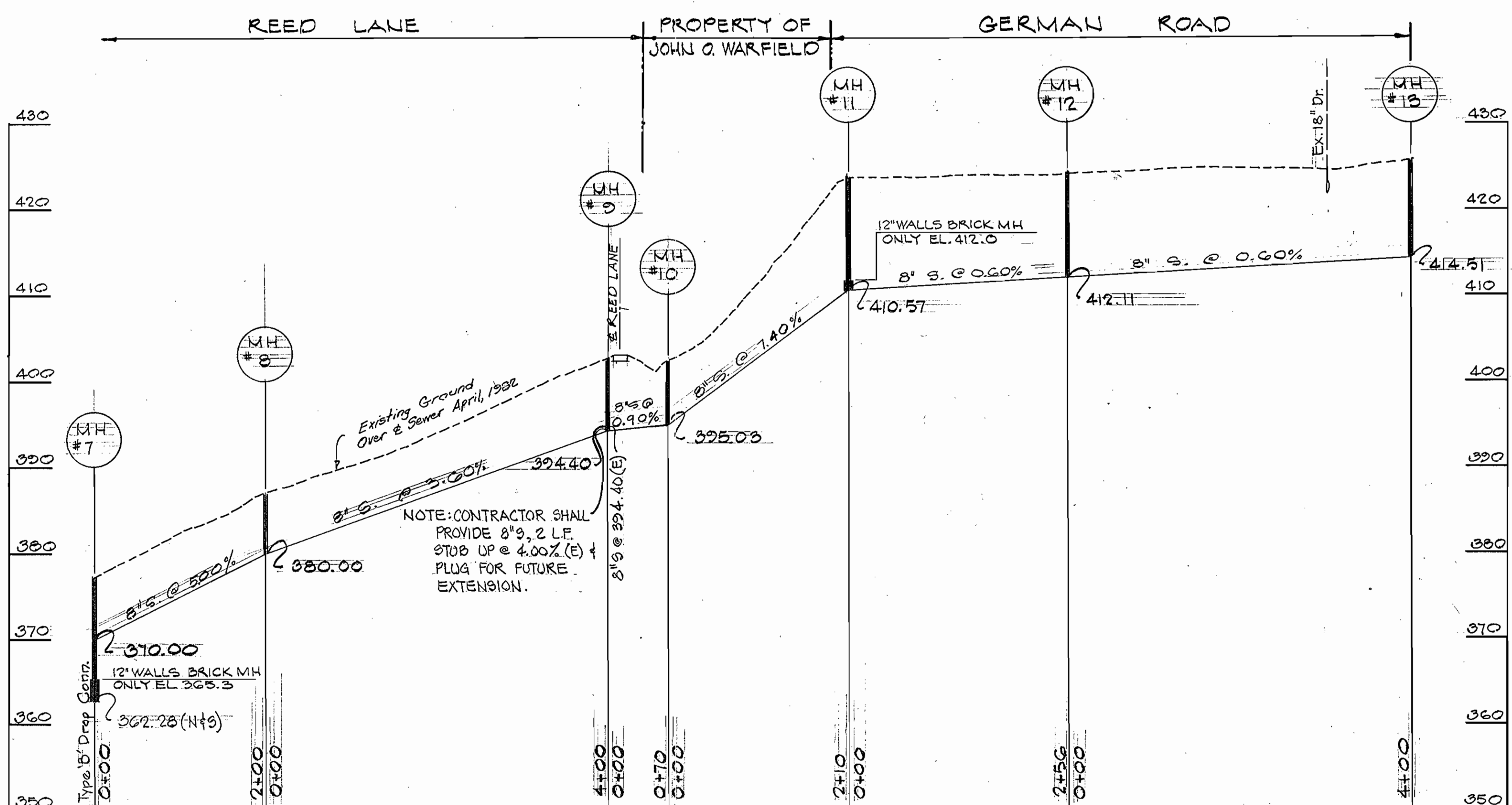
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SCALE: HOR. 1"=100'
VERT. 1"=10'
FOR PLAN SEE SHEET 40FB



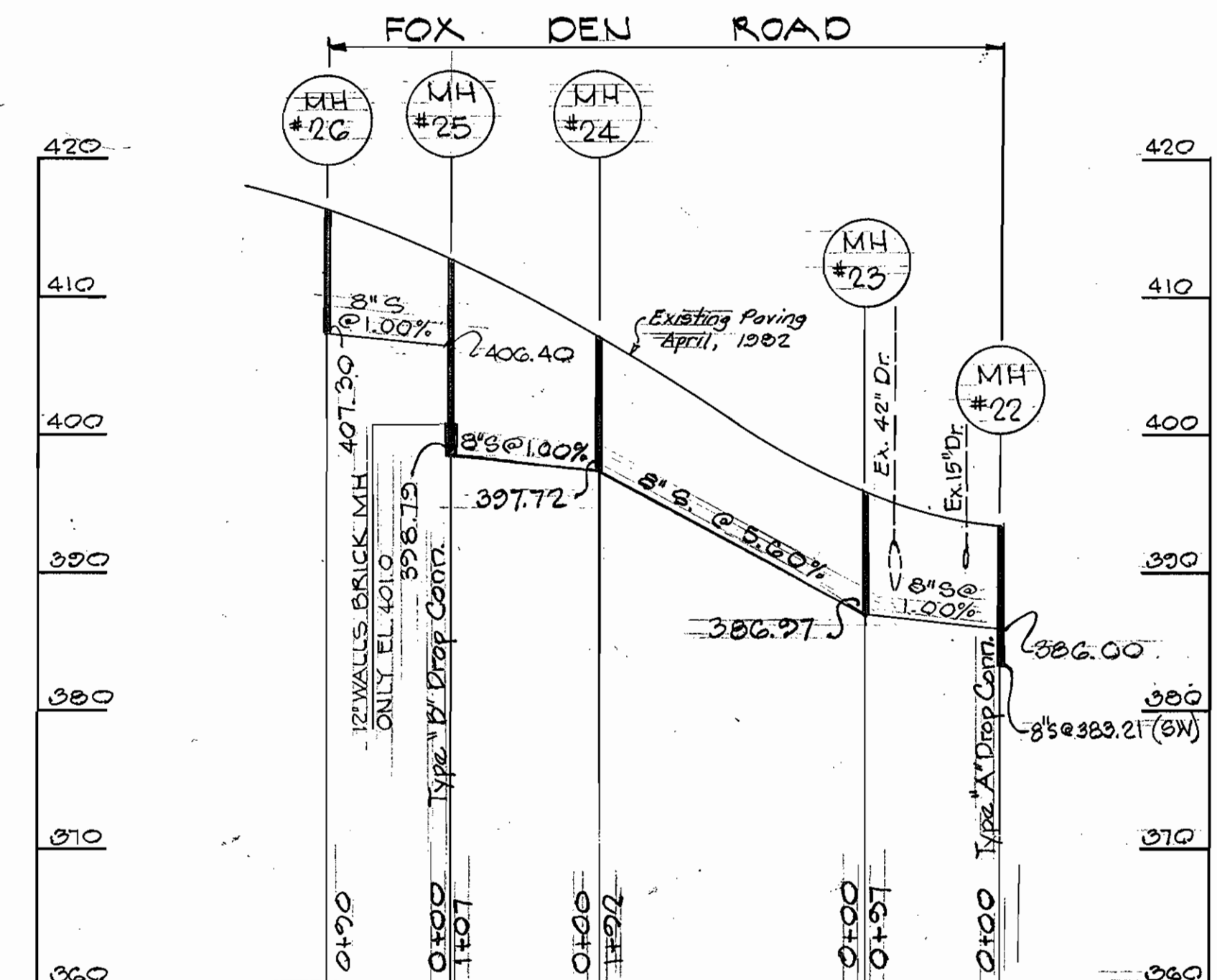
PROFILE
SCALE: HOR. 1"=100'
VERT. 1"=10'
FOR PLAN SEE SHEET 30FB



PROFILE
SCALE: HOR. 1"=100'
VERT. 1"=10'
FOR PLAN SEE SHEET 40FB

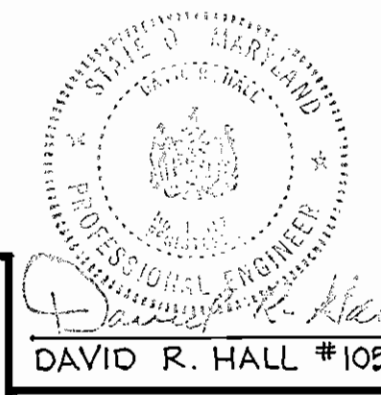


PROFILE
SCALE: HOR. 1"=100'
VERT. 1"=10'
FOR PLAN SEE SHEET 30FB



PROFILE
SCALE: HOR. 1"=100'
VERT. 1"=10'
FOR PLAN SEE SHEET 40FB

Rev.	Date	Remarks
Δ	12-84	As-Builts



DAVID R. HALL #10917
DATE 8-26-82

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
HOWARD COUNTY
FREDERICK WARD ASSOCIATES, INC.
ENGINEERS ARCHITECTS SURVEYORS
5 SOUTH MAIN STREET BEL AIR, MARYLAND

CONTRACT NO. 20-1067
CAPITAL PROJECT S-6051

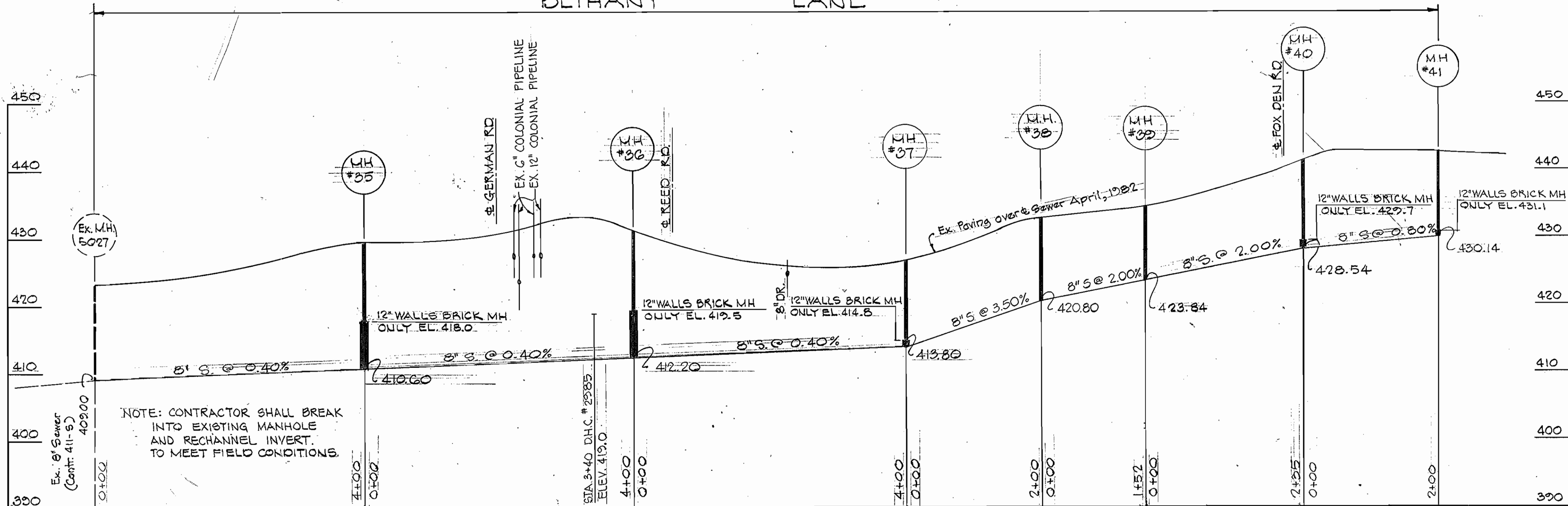
PROFILE OF
SEWER MAIN

AS-BUILTS
ELECTION DISTRICT
ELICOTT CITY NO.2

DRAWING NO. 7 OF 8
SCALE AS SHOWN
DES: A.E.L.
DRN: J.W.
CHK: A.E.L.

CONTRACT NO. 20-1067
CAPITAL PROJECT S-6051
BETHANY MANOR INTERCEPTOR
AND COLLECTOR SEWERS
HOWARD COUNTY

BETHANY LANE



NOTE: CONTRACTOR SHALL BREAK INTO EXISTING MANHOLE AND RECHANNEL INVERT TO MEET FIELD CONDITIONS.

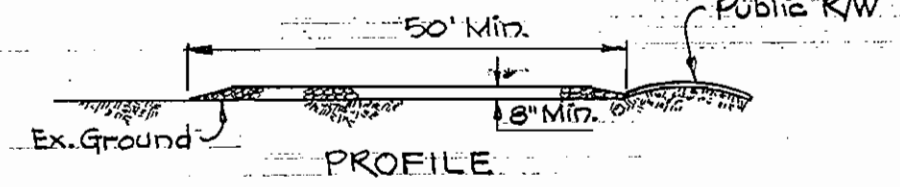
RIP RAP TO CONSIST OF DENSE ROCKS OF RANDOM SHAPE & SIZES, RESISTANT TO THE ACTION OF AIR AND WATER AND SUITABLE FOR BANK PROTECTION. ALL ROCKS SHALL WEIGH A MINIMUM OF 75 POUNDS.

EROSION CONTROL FABRIC SHALL BE POLY FILTER-X AS MANUFACTURED BY CARTHAGE MILLS, INC. OR DERMEALINER M-1193 AS MANUFACTURED BY STAFF INDUSTRIES, INC. OR EQUAL.

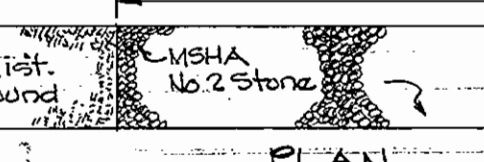
PROFILE

SCALE: HOR. 1"=100'
VERT. 1"=10'

FOR PLAN SEE SHEET 5 OF 8

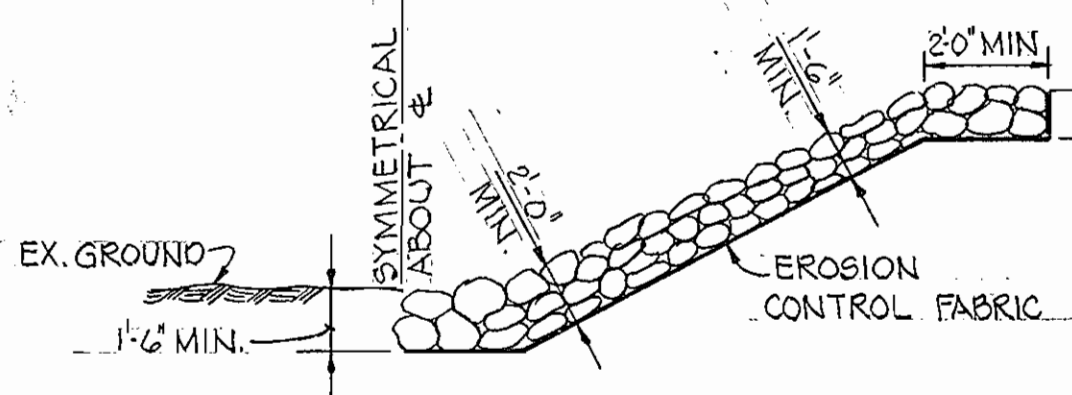


PLAN



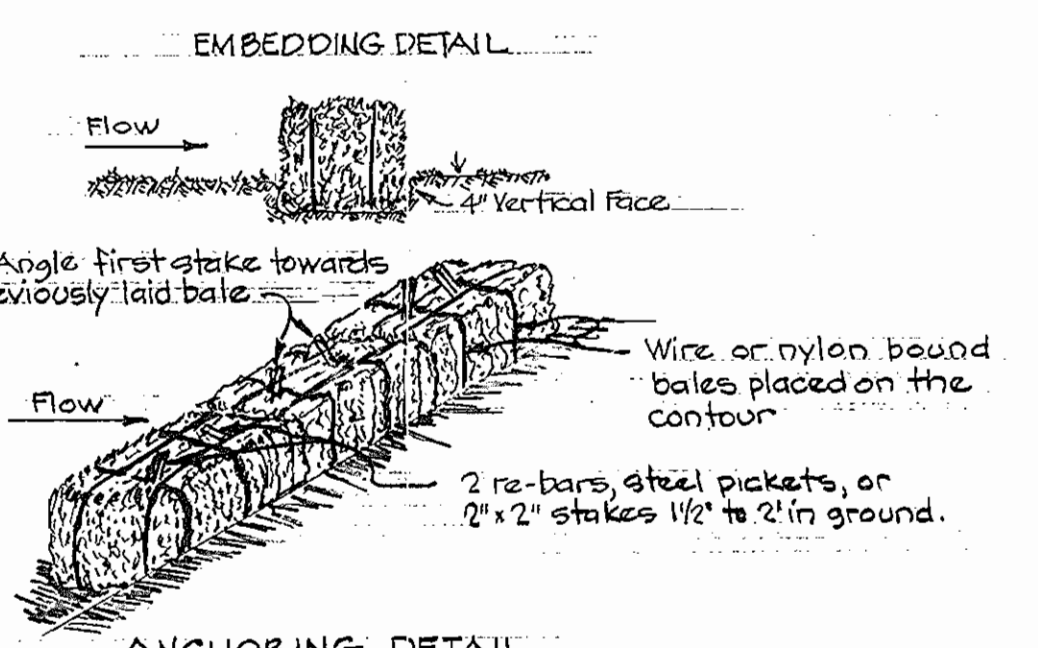
STABILIZED CONSTRUCTION ENTRANCE

NO SCALE



UNGROUTED RIP-RAP DETAIL

NOT TO SCALE

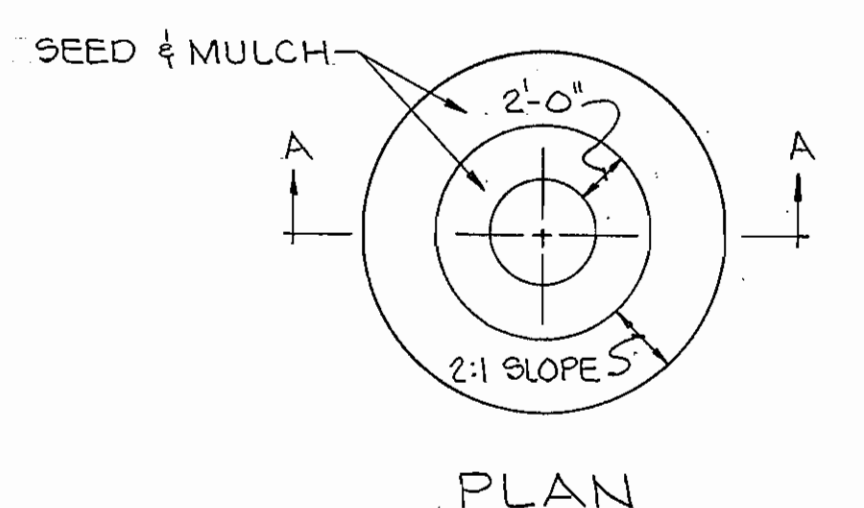


ANCHORING DETAIL

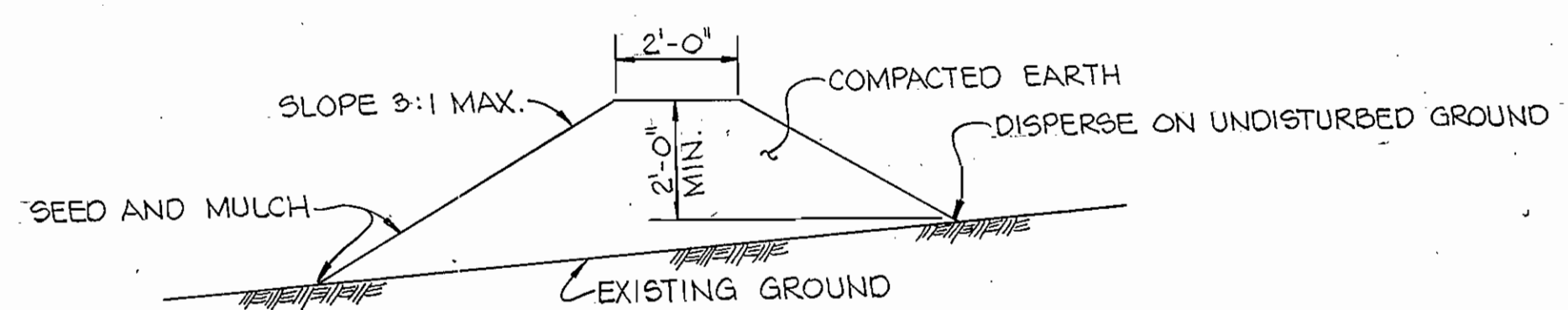
- NOTES
- Bales shall be placed in a row with ends tightly abutting adjacent bales.
 - Inspection shall be frequent and repair or replacement shall be made promptly as needed.
 - Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

STRAW BALE DIKE

NO SCALE



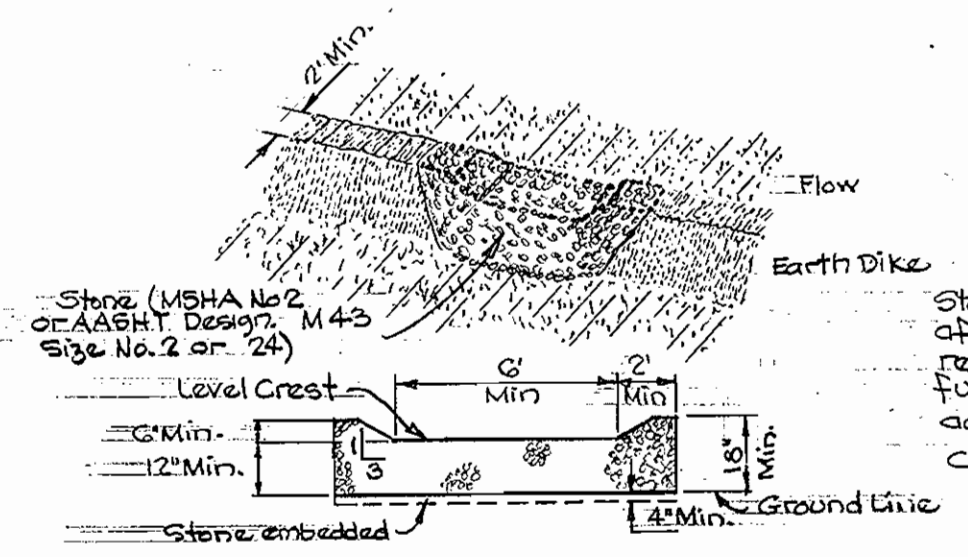
PLAN



NOTE: DIVERSION BERMS ARE REQUIRED EVERY 250 FEET ON CONTINUOUS SLOPES OF 4% OR GREATER. THE BERMS SHALL CONFORM TO THE TYPICAL SECTION SHOWN HEREON. THEY SHALL BE CONSTRUCTED ACROSS THE CONSTRUCTION AREAS IMMEDIATELY AFTER THE BACKFILLING OF THE PIPE TRENCH AND PRIOR TO PLACING STABILIZATION IN ORDER TO PREVENT EROSION OF THE BACKFILLED AREAS.

TEMPORARY EARTH DIVERSION BERM

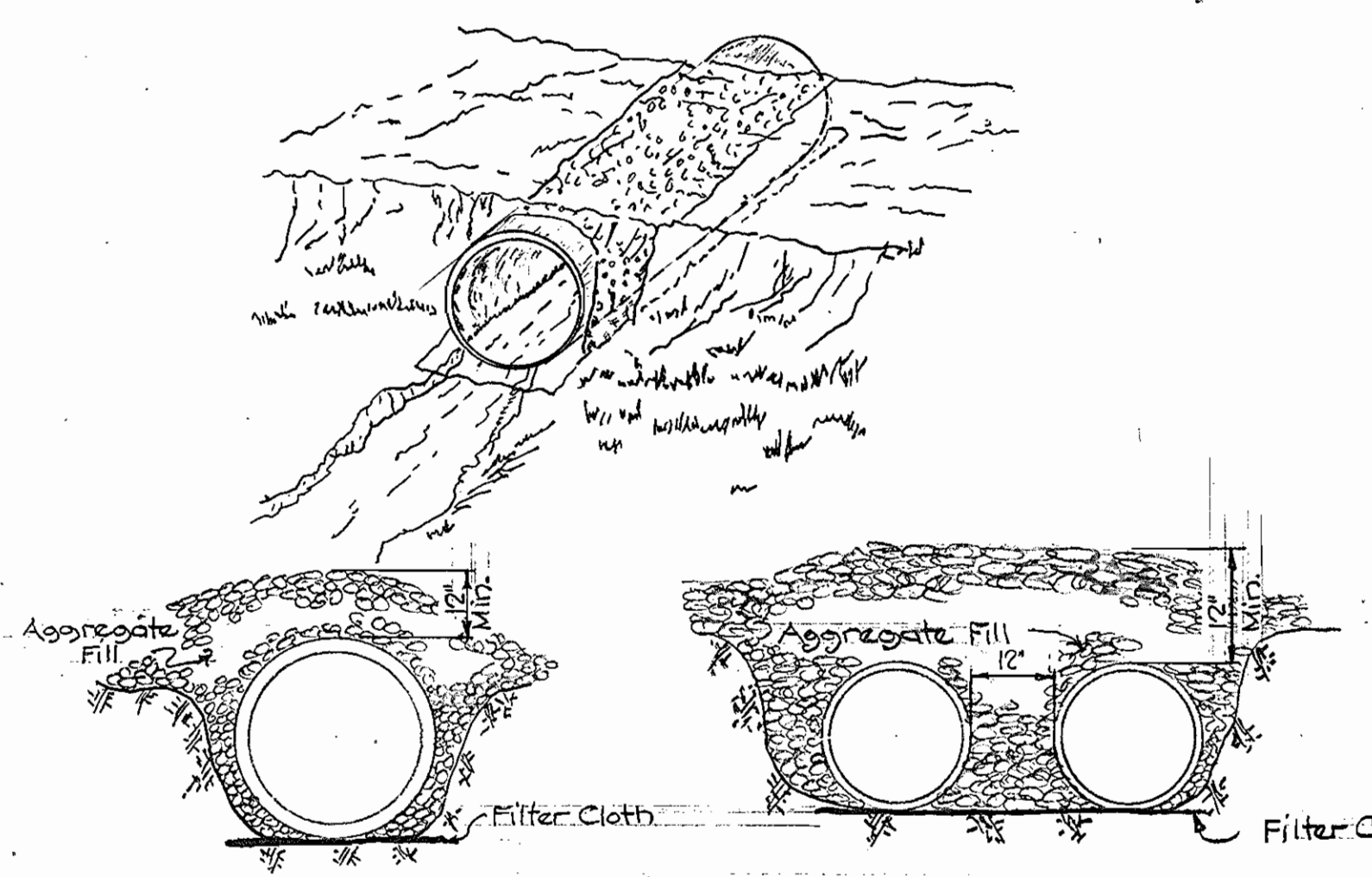
NOT TO SCALE



STONE OUTLET STRUCTURE

NO SCALE

Stone Outlet Structure shall be inspected after each rain, and the stone shall be replaced when the structure ceases to function as intended due to silt accumulation among the stone, washout, construction traffic damage, etc.



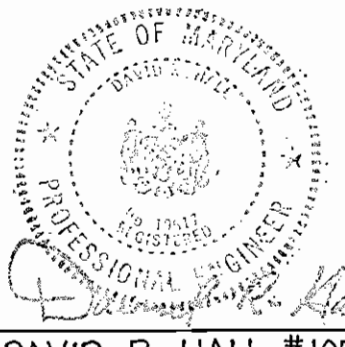
TEMPORARY STREAM ACCESS CULVERT

NO SCALE

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

Director of Public Works: *Allen F. Neuman* 8/30/82
 Chief, Bureau of Engineering: *Allen S. Brown* 8/30/82
 Chief, Bureau of Utilities: *Allen S. Brown* 8/30/82



FREDERICK WARD ASSOCIATES, INC.
 ENGINEERS ARCHITECTS SURVEYORS
 5 SOUTH MAIN STREET BEL AIR, MARYLAND

CONTRACT NO. 20-1067
 CAPITAL PROJECT S-6051

PROFILE AND DETAILS OF SEWER MAIN

ELECTION DISTRICT ELICOTT CITY NO. 2

DRAWING NO. 8 OF 8
 SCALE AS SHOWN
 DESIGNED BY: A.E.L.
 DRAWN BY: T.W.
 CHECKED BY: A.E.L.